

## Title (en)

Premixing fuel injector with improved secondary fuel-air injection

## Title (de)

Vormischende Brennstoffeinspritzvorrichtung mit sekundärer Brennstoff-Luft-Einspritzung

## Title (fr)

Injecteur de combustible à prémélange avec une injection secondaire de combustible-air

## Publication

**EP 0964204 A3 20000119 (EN)**

## Application

**EP 99304452 A 19990608**

## Priority

US 9337198 A 19980608

## Abstract (en)

[origin: EP0964204A2] A premixing, tangential entry fuel injector (10) for a gas turbine engine features a secondary fuel-air injection insert (40) positively secured to a centerbody shell (38) by a braze joint (98). A secondary fuel supply tube (42), positively secured to both a centerbody base (36) and to the insert (40), is curved in at least two dimensions. In an exemplary embodiment, the tube is coiled into a spiral shape covering a single 360 DEG cycle. During engine operation, the centerbody expands axially in response to elevated temperatures in the engine's interior, causing the insert (40) to be displaced away from the base (36). The curvature of the tube allows the tube (42) to flex slightly to accommodate the displacement. Ideally the curvature of the tube is such that the tube's natural frequency is well above the maximum vibratory frequency that the tube will experience during engine operation. <IMAGE>

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## Citation (search report)

- [A] WO 8000593 A1 19800403 - CATERPILLAR TRACTOR CO [US]
- [A] WO 9734108 A1 19970918 - PARKER HANNIFIN CORP [US], et al
- [A] US 5105621 A 19920421 - SIMMONS HAROLD C [US], et al
- [X] US 5735466 A 19980407 - KRAMER STEPHEN K [US], et al

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